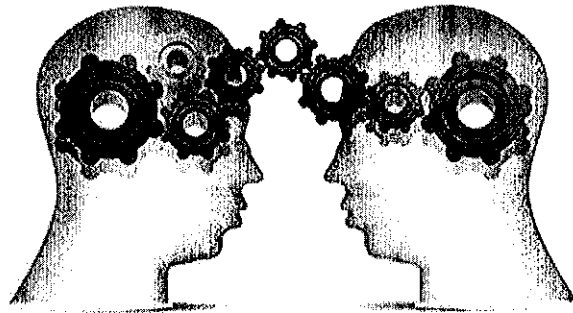


# Making Exceptional Thinking Visible



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3 – 2 – 1 Bridge Thinking Routine

3 WORDS...

- 1.
- 2.
- 3.

2 QUESTIONS...

- 1.
- 2.

1 METAPHOR OR SIMILE

- 1.

3 WORDS...

- 1.
- 2.
- 3.

2 QUESTIONS...

- 1.
- 2.

1 METAPHOR OR SIMILE

- 1.

BRIDGE

Identify how your new responses connect to  
or shifted from your initial response

## SEE / THINK / WONDER

*A routine for exploring works of art and other interesting things*

- What do you see?
- What do you think about that?
- What does it make you wonder?

### **Purpose: What kind of thinking does this routine encourage?**

This routine encourages students to make careful observations and thoughtful interpretations. It helps stimulate curiosity and sets the stage for inquiry.

### **Application: When and where can it be used?**

Use this routine when you want students to think carefully about why something looks the way it does or is the way it is. Use the routine at the beginning of a new unit to motivate student interest or try it with an object that connects to a topic during the unit of study. Consider using the routine with an interesting object near the end of a unit to encourage students to further apply their new knowledge and ideas.

### **Launch: What are some tips for starting and using this routine?**

Ask students to make an observation about an object – it could be an artwork, image, artifact or topic – and follow up with what they think might be going on or what they think this observation might be. Encourage students to back up their interpretation with reasons. Ask students to think about what this makes them wonder about the object or topic.

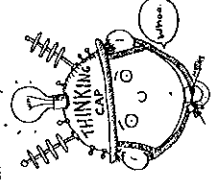
The routine works best when a student responds by using the three stems together at the same time, i.e., “*I see...*, *I think...*, *I wonder ....*” However, you may find that students begin by using one stem at a time, and that you need to scaffold each response with a follow up question for the next stem.

The routine works well in a group discussion but in some cases you may want to ask students to try the routine individually on paper or in their heads before sharing out as a class. Student responses to the routine can be written down and recorded so that a class chart of observations, interpretations and wonderings are listed for all to see and return to during the course of study.

## See-Think-Wonder



What do you **see** in this image that resonates with you?



What are you **thinking** about as you look at this image?



What **wonderings** (questions) do you have about this image ?

## CONNECT / EXTEND / CHALLENGE

*A routine for connecting new ideas to prior knowledge*

<b>CONNECT:</b>	How are the ideas and information presented <b>CONNECTED</b> to what you already knew?
<b>EXTEND:</b>	What new ideas did you get that <b>EXTENDED</b> or pushed your thinking in new directions?
<b>CHALLENGE:</b>	What is still <b>CHALLENGING</b> or confusing for you to get your mind around? What questions, wonderings or puzzles do you now have?

### **Purpose: What kind of thinking does this routine encourage?**

The routine helps students make connections between new ideas and prior knowledge. It also encourages them to take stock of ongoing questions, puzzles and difficulties as they reflect on what they are learning.

### **Application: When and where can it be used?**

The natural place to use the Connect-Extend-Challenge routine is after students have learned something new. It doesn't matter how *much* they have learned – it can be a lesson's worth, or a unit's worth. The routine is broadly applicable: Use it after students have explored a work of art, or anything else in the curriculum. Try it as a reflection during a lesson, after a longer project, or when completing a unit of study. Try using it after another routine!

### **Launch: What are some tips for starting and using this routine?**

This routine works well with the whole class, in small groups or individually. Keep a visible record of students' ideas. If you are working in a group, ask students to share some of their thoughts and collect a list of ideas in each of the three categories. Or have students write their individual responses on post-it notes and add them to a class chart. Keep students' visible thinking alive over time: Continually add new ideas to the lists and revisit the ideas and questions on the chart as students' understanding around a topic develops.

## THE 4C'S (Making Thinking Visible)

*After reading a text:*

- *Connections:* What connections do you draw between the text and your own life or your other learning?
- *Challenge:* What ideas, positions, or assumptions do you want to challenge or argue with in the text?
- *Concepts:* What key concepts or ideas do you think are important and worth holding onto from the text?
- *Changes:* What changes in attitudes, thinking, or action or suggested by the text, either for you or others?

**Purpose:** This routine provides learners with a structure for a text-based discussion built around making connections, asking questions, identifying key ideas, and considering application. It encourages the reading and the revisiting of text in a focused, purposeful way that enables readers to delve beneath the surface and go beyond the first impressions. Although originally designed for use with nonfiction text, it can be applied to fiction as well with only minor changes.

### **Steps:**

1. *Set up.* Invite learners to read the selected text either before the session or provide time within the session. After the routine has been learned, is often useful for the learners to know that the 4C's will be the framework for discussing the text. Have the process clearly visible.
2. *Making connections.* After reading the text, invite learners to find passages from the text that they can identify with, either from something that has happened to them or is somehow connected to other learning experiences. Begin group discussions by asking learners to read the passages from the text to which they are connecting. Ask them to explain the connection.
3. *Raise challenges.* Ask learners to find ideas oppositions in the text that, as they read them, raise the red flag for one reason or another. Have them explain what questions came into their minds as they read those ideas.
4. *Note concepts.* Briefly review the text and note key concepts, themes, or ideas. It is appropriate to say "What makes you say that?" To elicit foundation for their ideas.
5. *Identify changes.* Reflect on overall text and think about its implications. What does it suggest or encourage his actions or positions? Identify the changes of thinking that may have occurred as a result of reading.
6. *Share the thinking.*

*Although steps are presented in order, it is acceptable to vary them as students become more experienced.*

Making Thinking Visible (2011). Ron Ritchhart, Mark Church, Karin Morrison. (Jossey Bass)

## **Generate, Sort, Connect, Elaborate: Concept Maps**

*A routine for organizing one's understanding of a topic through concept mapping*

Select a topic, concept, or issue for which you want to map your understanding.

- Generate a list of ideas and initial thoughts that come to mind when you think about this particular topic/issue.
- Sort your ideas according to how central or tangential they are. Place central ideas near the center and more tangential ideas toward the outside of the page.
- Connect your ideas by drawing connecting lines between ideas that have something in common. Explain and write in a short sentence how the ideas are connected.
- Elaborate on any of the ideas/thoughts you have written so far by adding new ideas that expand, extend, or add to your initial ideas.

Continue generating, connecting, and elaborating new ideas until you feel you have a good representation of your understanding.

### **Purpose: What kind of thinking does this routine encourage?**

This routine activates prior knowledge and helps to generate ideas about a topic. It also facilitates making connections among ideas. Concept maps help to uncover students' mental models of a topic in a non-linear way.

### **Application: When and where can it be used?**

This routine can be useful as a pre-assessment before the beginning of a unit of study if students already have a lot of background information about the topic. Conversely, it can also be useful as a post or ongoing assessment to see what students are remembering and how they are connecting ideas. Individual maps can be used as the basis for construction of a whole classroom map. Maps can also be done progressively, with students adding to their maps each week of the unit.

### **Launch? What are some tips for starting and using this routine?**

Depending on how much familiarity students have with concept maps, you may need to demonstrate making a concept map using this routine with the whole class. However, if students are relatively familiar with the idea of concept maps, you can launch right into the routine explaining that students will be making concept maps but in a structured way. Give time for students to complete each step of the routine before moving on to the next step. It isn't necessary that students generate an exhaustive list of all their ideas initially, but make sure they have time to generate a rich and varied list before moving on. Tell students that at any point they can add new ideas to their list and incorporate them into their map. If you are adding to a map over time, you might want to have students use a different color pencil each time they make additions. Explaining and discussing maps with partners helps students to consolidate their thinking and gain other perspectives.

## STEP INSIDE: PERCEIVE, KNOW ABOUT, CARE ABOUT

*A routine for getting inside viewpoints*

Three core questions guide students in this routine:

1. What can the person or thing *perceive*?
2. What might the person or thing *know about* or *believe*?
3. What might the person or thing *care about*?

### **Purpose: What kind of thinking does this routine encourage?**

This routine helps students to explore different perspectives and viewpoints as they try to imagine things, events, problems, or issues differently. In some cases this can lead to a more creative understanding of what is being studied. For instance, imagining oneself as the numerator in a fraction. In other settings, exploring different viewpoints can open up possibilities for further creative exploration. For example, following this activity a student might write a poem from the perspective of a soldier's sword left on the battlefield.

### **Application: When and where can it be used?**

This routine asks students to step inside the role of a character or object—from a picture they are looking at, a story they have read, an element in a work of art, an historical event being discussed, and so on—and to imagine themselves inside that point of view. Students are asked to then speak or write from that chosen point of view. This routine works well when you want students to open up their thinking and look at things differently. It can be used as an initial kind of problem solving brainstorm that opens up a topic, issue, or item. It can also be used to help make abstract concepts, pictures, or events come more to life for students.

### **Launch: What are some tips for starting and using the routine?**

In getting started with the routine the teacher might invite students to look at an image and ask them to generate a list of the various perspectives or points of view embodied in that picture. Students then choose a particular point of view to embody or talk from, saying what they perceive, know about, and care about. Sometimes students might state their perspective before talking. Other times, they may not and then the class could guess which perspective they are speaking from.

In their speaking and writing, students may well go beyond these starter questions. Encourage them to take on the character of the thing they have chosen and talk about what they are experiencing. Students can improvise a brief spoken or written monologue, taking on this point of view, or students can work in pairs with each student asking questions that help their partner stay in character and draw out his or her point of view.

This routine is adapted from Debra Wise, *Art Works for Schools: A Curriculum for Teaching Thinking In and Through the Arts* (2002) DeCordova Museum and Sculpture Park, the President and Fellows of Harvard College and the Underground Railway Theater.



## 3-2-1 BRIDGE

*A routine for activating prior knowledge and making connections*

Your initial responses  
to the topic

3 Thoughts/Ideas

2 Questions

1 Analogy

Your new responses  
to the topic

3 Thoughts/Ideas

2 Questions

1 Analogy

Bridge:

Explain how your new responses connect to your initial responses?

### **Purpose: What kind of thinking does this routine encourage?**

This routine asks students to uncover their initial thoughts, ideas, questions and understandings about a topic and then to connect these to new thinking about the topic after they have received some instruction.

### **Application: When and where can it be used?**

This routine can be used when students are developing understanding of a concept over time. It may be a concept that they know a lot about in one context but instruction will focus their learning in a new direction, or it may be a concept about which students have only informal knowledge. Whenever new information is gained, bridges can be built between new ideas and prior understanding. The focus is on understanding and connecting one's thinking, rather than pushing it toward a specific outcome.

### **Launch: What are some tips for starting and using this routine?**

This routine can be introduced by having students do an initial 3, 2, 1 individually on paper. For instance, if the topic is "democracy," then students would write down 3 thoughts, 2 questions, and 1 analogy. Students might then read an article, watch a video, or engage in an activity having to do with democracy. Provocative experiences that push students thinking in new directions are best. After the experience, students complete another 3,2,1. Students then share their initial and new thinking, explaining to their partners how and why their thinking shifted. Make it clear to students that their initial thinking is not right or wrong, it is just a starting point. New experiences take our thinking in new directions.

# 3-2-1 Bridge

Initial Response	New Response
<b>3 Words</b> ★ ★ ★	<b>3 Words</b> ★ ★ ★
<b>2 Questions</b> ★ ★	<b>2 Questions</b> ★ ★
<b>1 Comparison</b> (Metaphor/Simile) ★	<b>1 Comparison</b> (Metaphor/Simile) ★
<b>Bridge</b>	



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## Internet Resources

- Teaching for Change: <http://t4change.blogspot.com/>
- Google Arts Project:  
<https://www.google.com/culturalinstitute/project/art-project>
- Visible Thinking:  
[http://www.visiblethinkingpz.org/VisibleThinking\\_html\\_files/03\\_ThinkingRoutines/03c\\_CoreRoutines.html](http://www.visiblethinkingpz.org/VisibleThinking_html_files/03_ThinkingRoutines/03c_CoreRoutines.html)
- Thinking Tools for 4Me: <https://tt4me.wordpress.com/15-2/>
- Tech and Critical Thinking: <https://www.smores.com/v9me-tech-critical-thinking>
- Differentiation resource:  
[http://www.dodea.edu/Curriculum/giftedEduc/upload/models\\_differentiation.pdf](http://www.dodea.edu/Curriculum/giftedEduc/upload/models_differentiation.pdf)
- Oral Histories Project at the Ellis Island Immigration Museum:  
<http://www.libertyellisfoundation.org/oral-histories>
- Code Switch on NPR: 3 Very Different Views Of Japanese Internment:  
[http://www.npr.org/sections/codeswitch/2016/02/17/466453528/photos-three-very-different-views-of-japanese-internment?utm\\_source=facebook.com&utm\\_medium=social&utm\\_campaign=npr&utm\\_term=nprnews&utm\\_content=20160217](http://www.npr.org/sections/codeswitch/2016/02/17/466453528/photos-three-very-different-views-of-japanese-internment?utm_source=facebook.com&utm_medium=social&utm_campaign=npr&utm_term=nprnews&utm_content=20160217)

## Print Resources

- Making Thinking Visible: How to Promote Engagement, Understanding and Independence for all Learners by Ron Ritchhart, Mark Church and Karin Morrison
- How to Teach Thinking Skills within the Common Core by James A. Bellanca, Robin Fogarty and Brian M. Pete

### Other Resources

- Powerpoint presentation used with permission from Jann H. Leppien titled: "Developing Minds: Strategies and Tools for Scaffolding Student Thinking" by Jann H. Leppien
- Powerpoint presentation titled, "Creating a Culture of Thinking" by Ron Ritchhart
- PowerPoint titled "Ways to Make Student Thinking Visible" by Ron Richhart, 2011